

**FOOD SCIENCE AND DIETETICS 1  
(FOOD SCIENCE TECHNOLOGY AND NUTRITION 1)**

**Course Code: 5756**

Food Science and Dietetics integrates Biology, Chemistry, and Physics in the study of food preparation, processing, preservation, and packaging. Students have opportunities to observe, make inferences, collect and interpret data, and draw conclusions. As students learn the concepts they gain knowledge and skills in food preparation, food selection, nutrition analysis, problem solving, critical thinking and career exploration. Throughout the course of this class, students will demonstrate management principles and practices that are necessary to be successful in the workplace. Integration of the Family and Consumer Sciences student organization, Family, Careers, and Community Leaders of America (FCCLA) greatly enhances this curriculum.

**Objectives:**

Students will:

1. summarize how food and food process methods have changed.
2. apply scientific procedures in collecting, observing, recording and analyzing data.
3. demonstrate knowledge of basic scientific principles.
4. determine the role of acids and bases in foods
5. examine the relationship between food intake and body weight.
6. evaluate the use of additives in foods.
7. demonstrate skills to work with a diverse group.
8. evaluate the use of various types of mixtures and solutions and the affect they have on foods.
9. demonstrate the use of food safety and sanitation.

**Credit:**

1-3

**National Certification:**

ServSafe

**Recommended Grades:**

10-11

**Class Size:**

20

**Prerequisites:**

Physical Science

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**Textbook Information:** <http://www.mysctextbooks.com/>

**High School Education:** product packager, product grader, produce worker

**Postsecondary Education:** food inspector assistant, packaging manager, sales and service manager

**Postgraduate Education:** food inspector, quality control technician, food scientist, product developer

**Standards Revision Committee:**

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Hanahan High School

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South Carolina Department of Education  
Office of Food Services

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Winthrop University

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**A. INTRODUCTION TO FOOD SCIENCE**

1. Interpret the interrelationship between food science and nutrition.
2. Evaluate how food products and processing have changed over time.
3. Research the benefits of studying food science in a global society.

**B. LABORATORY SAFETY**

1. Incorporate safe use of lab equipment.
2. Integrate safe lab techniques and procedures.
3. Implement sanitation practices in the lab.

**C. ENERGY**

1. Explore the types of energy used in the food industry.
2. Investigate how energy is released and absorbed through physical and chemical changes.

**D. METABOLISM**

1. Compare the relationships between food intake, physical activity, and body weight.
2. Explain how metabolism relates to caloric need.

**E. FOOD CHEMISTRY**

1. Summarize the properties and uses of water.
2. Summarize the purpose of carbohydrates in foods.
3. Summarize the purpose of lipids in foods.
4. Summarize the purpose of protein in foods.
5. Summarize enzyme reactions in foods.
6. Identify the properties of minerals and vitamins in foods.
7. Justify the use of additives in foods.
8. Summarize the purpose of acids and bases in foods.

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**F. FOOD MICROBIOLOGY**

1. Discriminate among yeast, bacteria, and mold.
2. Investigate the basic conditions that promote bacterial growth.
3. Explore the process for making cultured foods (i.e. dairy foods).

**G. FOOD PROCESSING AND PRESERVATION**

1. Analyze food-processing methods.
2. Explain the role of preservatives.
3. Explain the importance of packaging and processing in protecting the quality and safety of foods.

**H. FOOD SAFETY**

1. Summarize information regarding food borne illnesses as a health issue for individuals and families.
2. Relate the risks and/or threats to our nation's food supply.

**I. CAREERS IN FOOD SCIENCE**

1. Describe career paths within food science and nutrition.